EXPEDITION

THE BULLETIN OF THE UNIVERSITY MUSEUM
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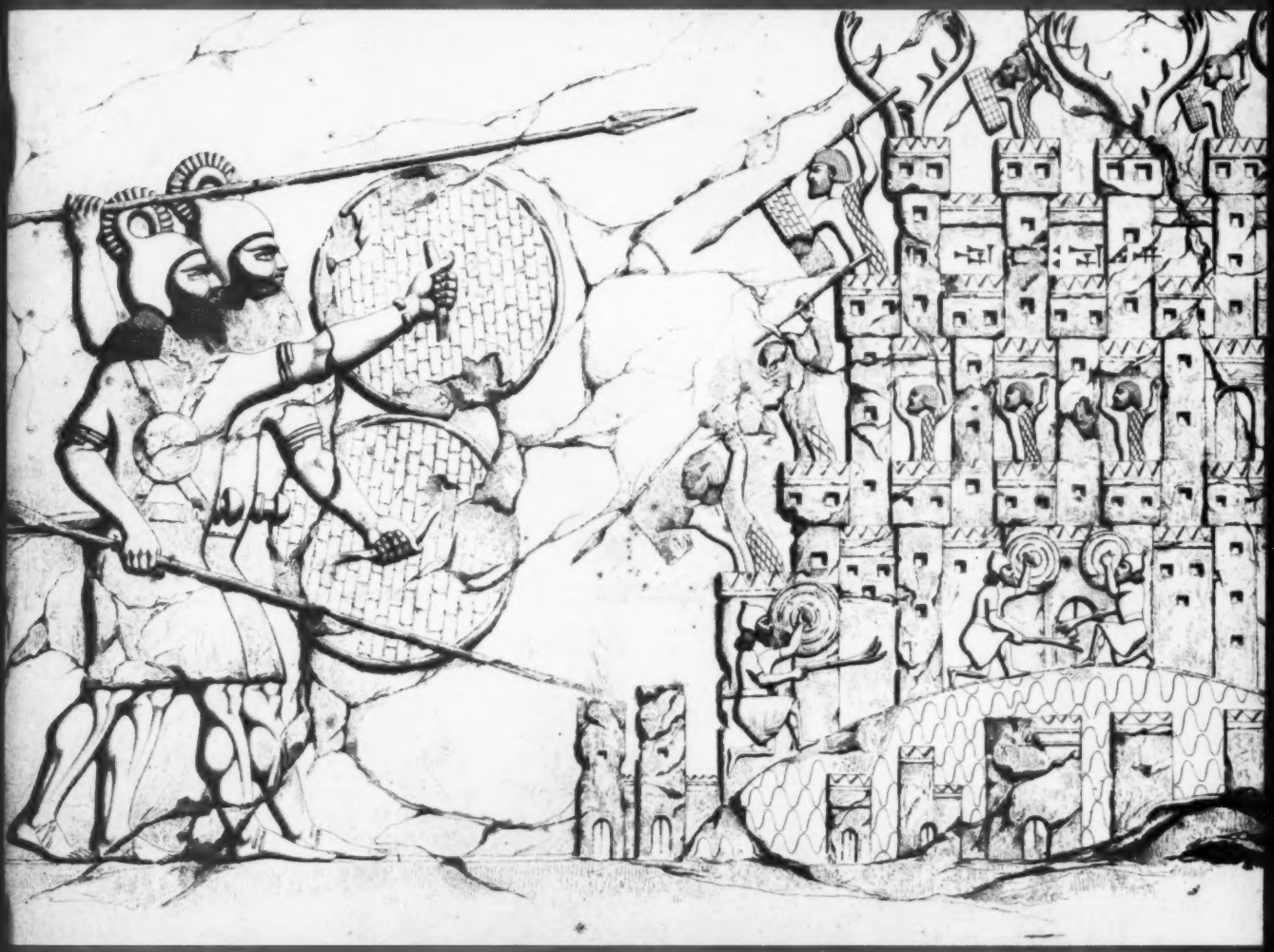

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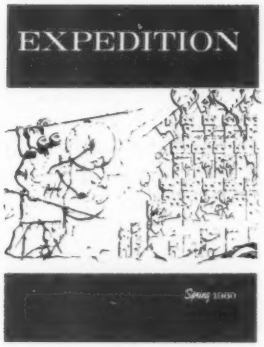

(Cover) An Assyrian attack on a northwestern Iranian town shown on a relief from the Palace of Sargon II at Khorsabad.

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EXPEDITION

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The Death of a City

By ROBERT H. DYSON, JR.

The plains and mountain valleys of northwestern Iran are littered with the skeletons of ancient cities. They lie, great mounds of deserted earth, like sleeping turtles upon the landscape. Each contains the secret of its own life and death. Collectively, they constitute a monument to the pride and energy of their builders—a testament to their fate.

In the early Iron Age, many of these inert masses were thriving cities occupied by warriors, artisans, and farmers. The annals of Sargon II, "the great king, the mighty king, king of the universe, king of Assyria," describe how he marched into western Iran in the eighth century B. C. and sacked "countless cities without number." These cities, which were also periodically attacked by Urartians from eastern Turkey, were differentiated as "fortified, walled cities" and "small nearby towns." The latter were simply looted and burned when captured; the former were also looted and burned, but in addition had their walls torn down. Those inhabitants who had not fled or been killed in battle were executed or marched off into slavery.

During the ninth century B. C. the present-day mound of Hasanlu, which dominates the northern Solduz Valley to the south of Lake Urmia, was crowned by just such a fortified citadel. With three or four sister fortresses in the area, it protected the western approach to the kingdom of Mannai which occupied the country south of the Lake. These fortress cities replaced earlier scattered villages and formed the centers of resistance to encroachments from Assyria and Urartu during the early first millennium B. C. These towns—a few private houses and a fortified citadel or castle—were the most advanced settlements in the area. They were in no way comparable to the huge metropolitan centers of the Mesopotamian plain but were, nonetheless, an important stage in the urban development of later historic Iran.

Hasanlu was one of these early towns in this development and is being excavated by a joint expedition of the University Museum and the Archaeological Service of Iran with the additional support of the Metropolitan Museum of Art of New York City.

The excavations show that the entire group of structures of the Citadel belonging to the ninth century complex were laid out and built largely as a unit on a pre-existing mound of ruins. The slopes of the mound were much steeper than at present and the upper surface uneven. For the

Or ever the silver cord be loosed, or the golden bowl be broken,
or the pitcher be broken at the fountain,
or the wheel broken at the cistern.
Then shall the dust return to the earth as it was:
and the spirit shall return unto God who gave it.
Vanity of vanities, saith the preacher;
all is vanity.

construction of the foundations, large slabs of limestone, sandstone, or metamorphic rock were hauled by wagon fifteen or twenty miles from the distant hills. Some of the slabs were over six feet in length and must have been very difficult to handle. The base of the fortification wall was leveled and, where the contours of the mound required it, stepped to follow the general mound surface. Within the walled area the regular plan of the major building so far excavated indicates that the buildings too were carefully laid out on a cleared area before construction.

Above the uncut stone foundations (which were free-standing) rose a superstructure of sun-dried mud brick set in a mud mortar. The bricks were large and square like those used in the later buildings of the Achaemenian Persians at Pasargadae, Persepolis, and Ecbatana. The dimensions indicate the stability of brick size over a period of perhaps four hundred years—a point of practical value to the archaeologist faced with the problem of dating newly found remains.

Attacks on fortified citadels of this type involved a major onset by archers against the ramparts while sappers tried to undermine the walls. Assaults by foot soldiers with ladders were also attempted. It is easy to see why people, endangered by such tactics and attacks, chose to live on the tops of old mounds and hills in the valley rather than down on the plain as they did in earlier and presumably less rapacious times.

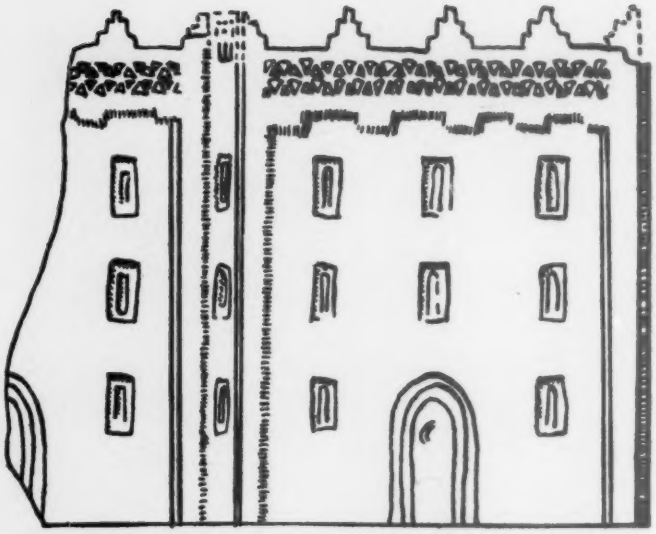
MAP BY A. ERIC PARKINSON

Brickwork: Ancient and Modern

In some areas the ninth century level at Hasanlu lies beneath the remains of buildings of the historic period. In others (above) it lies virtually at the surface. The volume of collapsed brick (which preserved the lower walls) indicates a two-story structure. The wall with the stepped niche (foreground) has been exposed to half its height. The lower picture shows the palace area looking north, with walls cleared to the floor level. The two-roomed "Bead House" occupies the foreground (1) facing "South Street" which runs diagonally from left to right. Beyond lies Burned Building I consisting of a Central Court (2) with East and West Wings. Building II lies right.

Stepped niches (above) were used in some instances as decorative elements flanking doorways. In Mesopotamia such niches were often associated with religious buildings. In modern village houses, on the other hand, they are still used to house lamps. The niche and other high walls were preserved by the accidental firing which baked the brick at the time of the destruction of the fortress at the end of the period.

Village building methods reflect ancient traditions as seen above in the construction of a new room for the Expedition house. A rock foundation set in a trench (thus not free-standing) supports a wall of sun-dried brick set in mud mortar which is sometimes mixed with a little lime. The bricks are made in a wooden frame, the mud often containing ancient potsherds as well as chopped straw. Mason's tools include string, plumbob, and trowel.

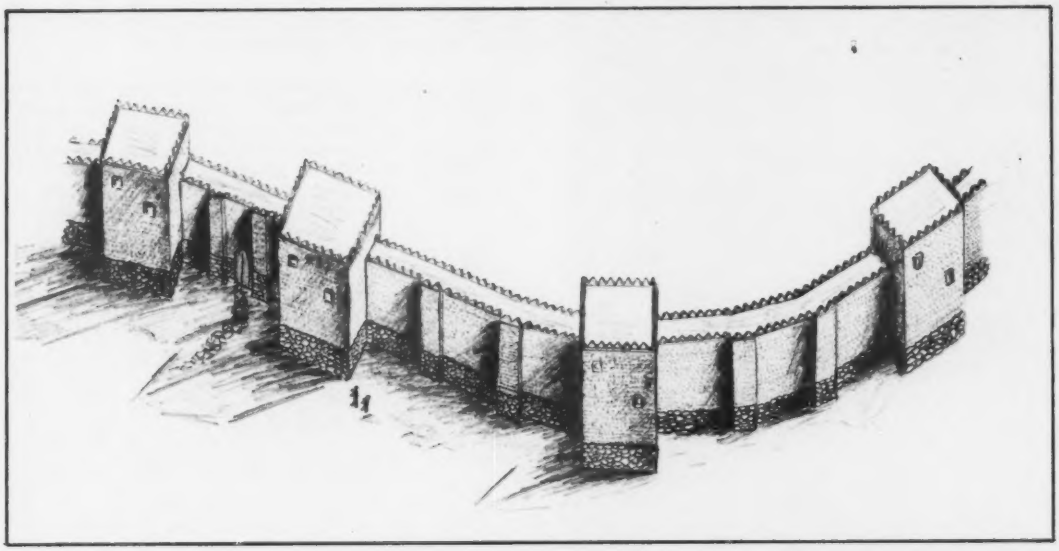


Dwellings

Houses of the ninth century rose to two or even three stories in height, as shown by stone reliefs (cover) and by a bronze house model from Urartu (left). The framed windows and arched doorway are typical features. Curiously, the doorways at Hasanlu contain no stones with pivot holes such as are found in Assyrian houses. Rather, as in the case of some Urartian doorways at Karmir Blur in Soviet Armenia, the doorways were provided with wooden frames. No indication of hinges has been found at Hasanlu and the method of hanging the doors is, therefore, still unknown. Nor have any remains of windows been preserved although they must have been used. Framed windows of the type seen in the model, set similarly in a recessed wall under a crenelated eave, are found in the much later Fire-temple at Naqsh-i-Rustam, burial place of the Achaemenian kings of the sixth and fifth centuries B. C. in southern Iran.

The possibility that some of the Hasanlu roofs may have been pitched rather than flat is raised by the known use of such roofs on the temple of Haldi in nearby Musasir, west of Hasanlu, and in the stone tomb of Cyrus (d. 529 B. C.) at Pasargadae.

For the adornment of inside walls at Hasanlu, Assyrian style glazed wall tiles were employed. Such tiles apparently were used sparingly, however, as only a few have been found. Simple geometric patterns in black, yellow, and white imitate more elaborate tiles in the palaces at Ashur and Nimrud. A hollow knob in the center of the tile provided a means of attachment to a wooden peg set in the wall. Rarely, this knob was given human or animal form. The human head (left) is one of these and recalls with its beard and horned cap the third chariot god on the Hasanlu Bowl *(Expedition* 1, 3, page 19), who wears a similar costume.



Defense

A powerful mud brick wall set on stone foundations defended the Citadel at Hasanlu. It was strengthened at intervals by stone piers set between projecting towers. The hypothetical reconstruction (above) is drawn to scale from the plan, using Assyrian reliefs of the period as a guide and basing the height of the brickwork on proportions given in the annals of Sargon of Assyria regarding walls in northwestern Iran. The full preserved height of the stone base is about eight feet, while the thickness is over nine. The probable total height would have been about thirty feet.

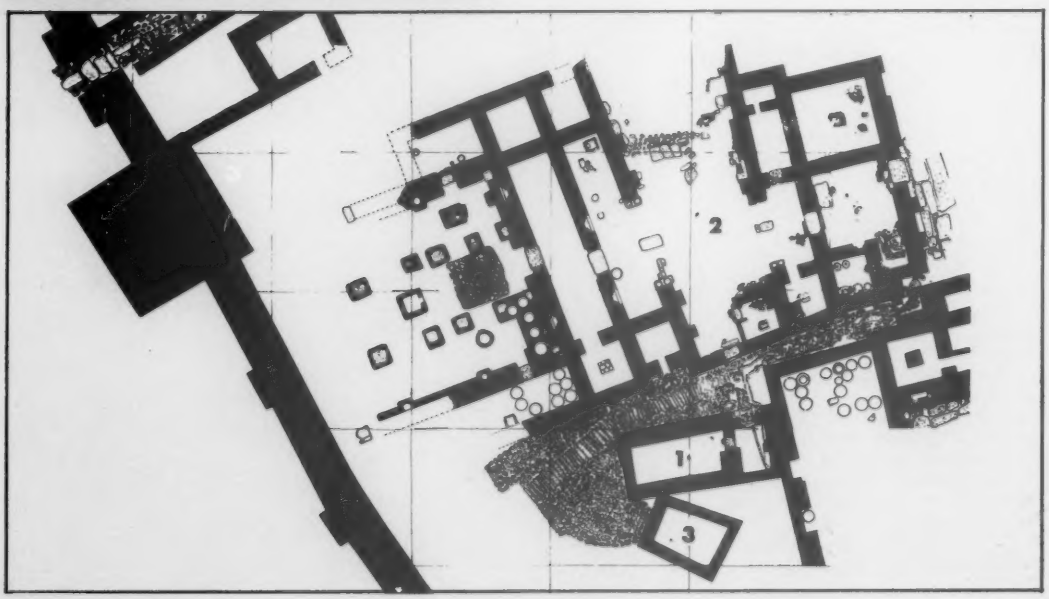
Inside the West Gate, which was paved with three large slabs (one of which has been pried up in the picture to the right), a paved street led into the central area of the Citadel. Under the street runs a stone-lined drain which passes through the gate and on down the slope of the mound. The row of trees marks the edge of the Outer Town area which lies below. The gate faces in the direction of the Zagros mountains which separate the valley from Assyria.

Citadel Buildings

Although the entire inner area of the Citadel was occupied by buildings, only those of the southwestern quadrant are at present known from excavation. The plan (below) reveals a large palace-like structure, Burned Building I (2), separated from a second partially excavated building by a paved street which appears once to have widened into a courtyard behind a tower in the fortification wall. Next to this South Street court area stood two small buildings of single story height—the two-room Bead House (1) and the one-room South House (3). The latter contained many bowls with pointed bases while the former held many beads, broken bone "handles," and stone bowl fragments. Next to these two buildings, which were built late in the period, stands the large storage room of another palace building running into the unexcavated area to the right. A view from that unexcavated area looking diagonally across the ruins toward the northwest is shown in the picture on the left. Large storage jars line the floor. In some instances, one jar had been stacked above another. In the background may be seen the western portico and stepped niches of Burned Building I.

The architecture, as do some of the objects, reflects the geographical position of Hasanlu at a crossroads. The use of spaced towers and intermittent piers on the Citadel wall parallels similar features at the Urartian site of Karmir Blur. The rectangular balanced plan of the main building recalls the *Bit-hîlani* palaces of northern Syria.

Fragments of broken stone bowls like the one shown were found in and around the Bead House, the entrance to which is seen at the right. Under



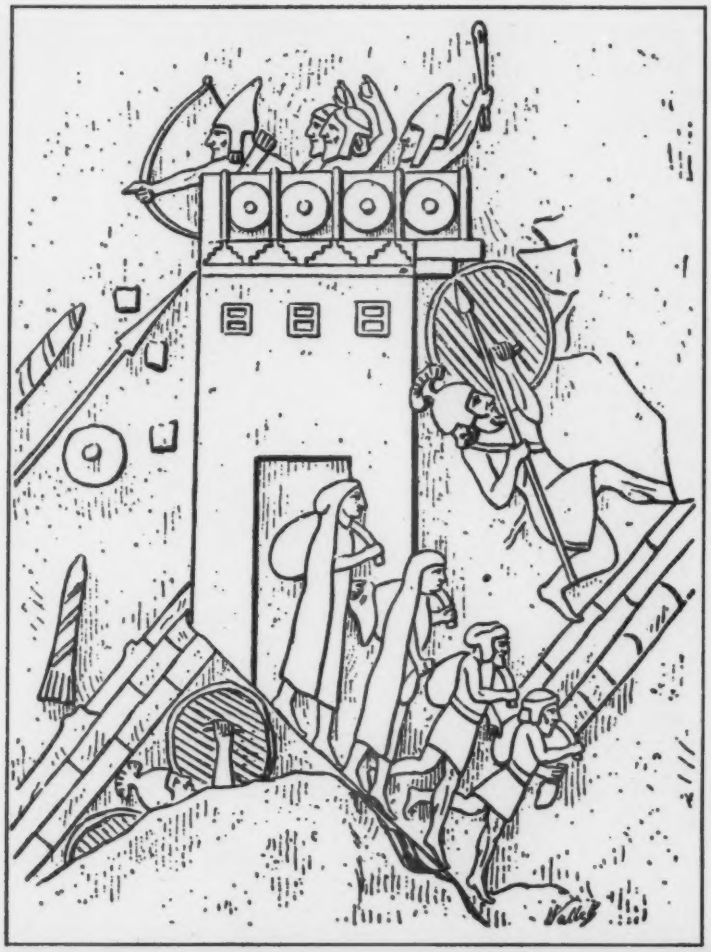
the entry room of the house ran a stone-lined drain connecting the courtyard area behind the house with the street in front. The paving stones in the street have been removed to show this underlying channel. The small auxiliary channel to the left probably drained the area between the walls of the Bead House and an adjoining building.

Across the street, the main room in the east wing of Burned Building I contained an enormous slab of limestone set against the wall next to the door opening onto the portico of the Central Court. Such a stone slab may have been used as a base for a piece of furniture in the fashion of an Assyrian throne room; but as no remains of charred furniture were found in the room, its function must remain hypothetical. The doorway was framed by wood as shown by impressions in the plaster. The wall was first covered with mud plaster and then coated with white lime. Remains of such plaster and a

small stepped niche may be seen on the southern wall of the room (right). No evidence of wall painting has yet come to light but there is no reason to think that such painting did not exist.

Attack

Like many cities of the early first millennium B. C. in northwestern Iran, Hasanlu was suddenly attacked and burned. During the attack and looting many objects were dropped or left in the flaming buildings. Among these were many bronze daggers and the handsome sword shown below. With it is shown what appears to be a piece of shoulder armor with a hole for the neck and perforations along the edges for the attachment of leather or heavy cloth. Such cloth may have been covered with small bronze buttons, many of which have been found loose in the soil. Wide belts with copper plaques were also worn. Warriors carried daggers, spears, and maceheads made of bronze or iron or both.



The plundering activities of Assyrian times are known from many stone reliefs (left) and texts of the period. Objects taken ran into the thousands and were of many kinds. In 714 B. C. Sargon lists among his spoils at Musasir (west of Hasanlu) weapons of bronze, gold, and silver; ivory staffs; bronze shields; silver basins, vases, and braziers; perfume burners; ivory furniture and gold door fittings. Scenes of Iran at Khorsabad (cover) and on the palace at Nineveh (left) suggest the violence of these attacks. When the smoke cleared away from the vanquished city it usually lay, a sprawling burned-out ruin, its walls pulled down, its dead entombed within its fallen palaces (as below) or hanging decapitated from nearby posts, abandoned like the town to the wind and rain. Some such scene, caused by Assyrian or Urartian, filled the Iranian sundown the day that ninth century Hasanlu died.

A Korean Potter's Masterpiece

By JEAN GORDON LEE

Since 1916 a most unusual celadon vase has been in the Museum's collection. Bought through Joseph Duveen at the time he was liquidating the Morgan collection of Chinese porcelain, it is an outstanding example of the Oriental potters' art.

When, in 1911, the second volume of Mr. J. P. Morgan's privately printed and most opulent catalogue of his collection appeared, this vase was described in Part Two of this volume as:

> TALL CELADON GALLIPOT in which the bluish trend in the hue of the glaze has prevailed over the green.
>
> No. 1438. Over the entire body are drawn and modelled lotus flowers, grasses and ferns, and among them are three feeding storks. This vase, by reason of its color and the lavish decoration, is unique. YUAN. (1280-1367.)
>
> (Plate CXLVIII) Height 16 inches.

We know that the pieces listed in this second portion of the catalogue were purchased by Mr. Morgan between 1905 and 1910. Mr. Edward Laffan, who unfortunately did not live to finish the catalogue which he had set out to complete, must, at the time of his death, have felt that this piece had been made in China. Such a conclusion was not at all unreasonable, for it has been positively established that the Korean potters of the Koryo period (A. D. 935-1392) must have had contact with their Chinese confreres working to the South in Honan province. Certainly the beautiful soft green glaze, developed by the use of iron oxide fired in a reducing atmosphere, was first produced in China. The decorative technique of incising a bold pattern in the biscuit before glazing was also a Chinese innovation. However, the Museum records show that when it was first catalogued in Philadelphia it was rightly called Korean and dated in the 10th century. This date I feel to be a bit sanguine and, in the light of present knowledge, it is most probable that the vase was made in the 12th century.

May I enlarge slightly upon Mr. Laffan's fifty-year-old description. The vase measures 16 inches in height and 9 inches at the widest diameter of the gracefully rounded shoulder. It is covered with a beautiful pale bluish-green glaze, except on the foot ring, which is bare, and on the base where the glaze was applied unevenly. The exposed body had fired a brownish red, probably due to the iron content of the clay. No bits of adherent clay spurs can be seen on the foot rim.

On the exterior, the incised decoration begins at the base of the short neck. On the sloping shoulder a six-lobed collar-like design of scrolled leaf forms leads the eye down to the main decoration which consists of three alternating clusters of lotus flowers, buds and foliage and three clumps of mallow flowers, buds and foliage. A small, probably white, heron is poised on one leg before each lotus cluster. As a lower framing border, the decorator has incised a row of lotus petals, each alternate full petal being filled with what resembles a fungus with scrolled leaves above and below.

What more appropriate assemblage of flora and fauna could the artist have chosen, perhaps to show, through a glass greenly, a finny creature's impression of his Korean marshlands? For such flowers and birds still can be found there.

Unfortunately, present knowledge of Korean art still leaves a great deal to supposition and certainly fifty years ago it was very limited. The term celadon is a western one, believed to have been inspired in France of the 17th century by the pale green costume worn by a shepherd named Céladon in the stage production of D'Urfé's romance, *L'Astrée*. The Chinese and Koreans generally named their ceramic wares after their kiln sites. As far as we know now, the earliest Western reference to this pale green glazed stoneware appears in *Life in Corea*, a book written in 1888 by her Majesty's Vice

PHOTOGRAPH BY REUBEN GOLDBERG

Consul at Shanghai and former Vice Consul in 'Corea,' W. R. Carles, F. R. G. S., who, in his most perspicacious account of the then "newly opened country," mentions in his description of the old capital of "Song-do" as "the place of manufacture of the best Corean pottery" the fact that he "succeeded in purchasing a few pieces, part of a set of thirty-six, which were said to have been taken out of some large grave near Song-do, [present Kaesong, northwest of Seoul]. These are for the most part celadon ware, glazed, with a pattern running underneath the glaze. As described by a gentleman who examined them carefully, the main patterns appear to be engraved upon the clay as fine grooves or scratches, and the subsequently applied glaze is put on so thickly as to obliterate the grooves and produce an even surface. They are made of an opaque clay of a light reddish colour, and appear, as usual with Oriental fictile ware, to have been supported in the kiln on three supports, and the supports used in several instances, at least, have been small fragments of opaque quartz, portions of which still adhere to some of them."

Here is the first written evidence of tomb looting which became so common in the last decade of the 19th century and after the Russo-Japanese war of 1904-1905. Many royal tombs of the Koryo period were located outside of the old capital, and grave robbers, fully aware of the custom of burying personal treasures with the deceased, surreptitiously "dug for treasures." Naturally they were loath to divulge their sources of supply and so, until Japanese archaeologists excavated some tombs and nine kiln sites, knowledge was terribly sketchy. We still have much to learn but we do know that most of this beautiful ware now preserved in western collections has come from tombs. This explains its amazing state of preservation.

We know that Mr. Carles returned eventually to England with his collection and must suppose that in time it was dispersed. So far, however, it has been impossible to trace any of these pieces, and even now I may only suggest that this extremely fine example may have been one of the pieces from the looted tomb. Its quality is certainly Imperial.

THE CHANGING FACE OF ARCHAEOLOGY

By FROELICH RAINEY

Sweeping in over the roof of the jungle, a twin-engined passenger plane settles down on the landing strip hacked out of the wilderness at Tikal. Already parked beside the strip are two other planes.

A bright, clear Sunday like this will bring more than a hundred trippers from Guatemala City, an hour away by air—people from all over the world, come to take a look at the ancient Maya capital emerging stone by stone after more than a thousand years of entombment beneath the jungle.

Three years of excavation and restoration by the University Museum in Philadelphia have turned this most spectacular among the dead Maya cities into a major tourist attraction. Soon there will be a bigger runway for international planes, a hotel, and a museum—all being planned by the Guatemala Government.

At dozens of other sites across the world today, much the same thing is happening. For nowadays archaeology is big news. It has captured the imaginations of great masses of people everywhere. In London long lines of men and women queue up to see the remains of a Roman temple unearthed in the heart of the city. The discovery of the Dead Sea Scrolls creates a sensation throughout most of the civilized world. Along the Mediterranean shore scores of amateur skin-divers search the sea bottom near reefs for the wrecks of ancient Greek and Roman galleys.

In nearly every country on earth, "diggers," both professional and amateur, are uncovering the records of the past as never before, and the accounts of their discoveries are headline news in Peking as well as in London. In our time, the science of archaeology, born only about a hundred years ago, has entered on a period of amazing growth and development.

Before the Second World War the field belonged mostly to a number of European and American scholars, more or less inadequately subsidized and operating in a few selected areas. Except for an occasional spectacular find

like the tomb of King Tutankhamon, in Egypt, their discoveries attracted the interest chiefly of other scholars.

But since the war, social and political revolution, sweeping Asia and Africa, has created new nations and new nationalisms. Most of the new or re-born nations, in pride of independence, have begun making intensive studies of their own cultural history. Other nations, longer established, are looking to the background out of which their national identity emerged.

Soviet Russia and Red China, for example, now have scores of archaeological expeditions in the field each year with impressive government backing. Professional diggers in Turkey, Iraq, Egypt, Pakistan, and India have made startling discoveries in recent years, and the newest nations in North and West Africa are beginning to establish their own government departments of antiquity.

Along with this growth in the range of activity, has come the development of wholly new archaeological techniques.

Atomic physicists have made it possible to determine the age of old tombs, ruined cities, or cave dwellings, by measuring the amount of radioactive carbon in objects removed from such ancient deposits. This is done with an elaborate Geiger counter equipped to measure infinitesimal amounts of radioactivity remaining in organic substances up to thirty thousand years after death. Hence it is now possible to analyze bits of charcoal from a Stone-Age campfire, mummy cloth from an Egyptian tomb, or wood from an ageless city in Babylonia, and state with remarkable accuracy just when the fire was burned, the cloth woven, or the tree felled. For the first time, the diggers have a way of dating precisely events which took place long before the age of written history.

Other spectacular tools now being developed include "resistivity" equipment and the "proton-magnetometer," both of which explore the earth electronically and make it possible to chart the remains of ancient dwelling sites beneath the surface of the soil without turning a spadeful of earth.

Aerial photography has been used to reveal vast man-made earthworks not noticeable from the ground, as, for example, along the desert coasts of Peru.

Though underseas archaeology is just beginning, it has already chalked up some spectacular discoveries, and it holds out rich promises for the future. It is probable that underseas television cameras will soon be at work spotting wrecked ships and the submerged ruins of forgotten cities.

All these developments are helping to bring closer the day when man can hope at last for an answer to the big questions now facing archaeologists:

> When and where on this earth did evolution, in its slow process, produce the first truly human being?
>
> How long ago did man turn from his immemorial life as a nomadic huntsman to found his first cities and learn the first simple techniques which were to lead to our present complex technological civilization?
>
> Did the earliest civilization develop in one place and spread from there across the world or did civilization develop spontaneously and independently in many places?

In the century or so before World War II, archaeologists had worked out a set of partial answers to these questions which were pretty generally accepted, though far from proven.

In the "Cradle of Civilization," that region lying between the Nile and the Indus, archaeologists, over the years, had developed a calendar of events going back to about 3000 B. C. Utilizing ancient Greek records, traditional lists of Egyptian and Babylonian kings, and ancient inscriptions, it was possible to make an absolute correlation between recorded events and our own calendar from about 1800 B. C. to the present. The dating of events between 1800 B. C. and 3000 B. C. was not precise because there are gaps in the record and uncertainties about the exact time, in terms of our own calendar, of events mentioned in the earliest written records.

Nevertheless, the discoveries of a series of eminent archaeologists had brought a more-or-less general agreement that by 3000 B. C. men had passed through their first great technological revolution and were living a civilized, urban existence with large cities, a system of writing, a knowledge of mathematics, engineering, astronomy, and a complex social and political system. Just when, where, and how this change from savagery to civilization took place was still largely a matter of conjecture.

Since the war, extended digging in Iraq, Iran, and Jordan, aided by the atomic dating method, has opened up a whole new epoch of human history.

In Iraq, in 1947, the Government Department of Antiquities discovered near Biblical Nineveh the site of a village carbon-dating from at least 5,000 B. C. Materials excavated on the site included fired pottery, showing that by so early a date its people had learned to use heat in manufacture—the basic secret which lies behind all technological advance. Furthermore, the presence of grain indicates that they had learned to grow crops—the development which triggered the fantastic growth of human population and made firm man's ascendancy over all other creatures of the earth.

But perhaps the most dramatic discovery bearing upon the antiquity of our civilization was made in 1958 at another Biblical town—Jericho, in Jordan. There, after years of digging deeper and deeper down through the mounds of refuse left by thousands of years and unnumbered generations, a British expedition led by Kathleen Kenyon found the remains of what is certainly the oldest fortified town yet discovered. It is radio-carbon dated at 7,000 years before Christ. There were no traces of metal tools, or even of fired pottery. But there were evidences of an irrigation system, and hence a knowledge of engineering as well as of architecture.

Thanks to carbon-dating, our calendar of events in the story of the origins and growth of civilization has now been extended by at least four thousand years, and we know that man took to urban living far earlier than anyone had believed possible.

But whether this earliest known civilization in the Near East was the beginning of all civilization, or whether other peoples elsewhere were developing techniques and building cities of their own, no one can yet say with certainty.

We have long known that there were many contacts between the various civilizations springing up around the Mediterranean—between the Egyptians and the Minoans and the Babylonians. And these were in touch with the civilization growing up farther east in the Indus Valley. But were there

interchanges of any kind among remoter civilizations—between the Mediterranean peoples and China, between the Maya of Central America and the people of the Near East? Here, again, there have been only conjecture and deduction.

There may be a clue in one rather remarkable fact: always archaeology shows early advances in civilization beginning in the Near East and turning up elsewhere much later. The making of bronze, for example, started in the Near East around 3,000 B.C. It had reached Europe, in one direction, and China in the other by 1500 B.C. Many hundreds of years later it appeared in South America, sometime before the Spanish Conquest.

The spoke-wheeled chariot was first used in Iraq around 2,000 B.C. It had reached Egypt by 1600 B.C. A hundred years later it was in China, and by 1,000 B.C. it was being used by the barbarian tribes of Baltic Europe.

Over and over again, early history repeats the same pattern. Yet it may be that as we go on digging someone will find new evidence to reverse this pattern. No one can tell what surprises lie hidden under the earth the centuries have piled up.

Today the answer to the whole question may not be far off, thanks to the impetus of national feeling in Asia and Africa which has set many countries to digging up their past. With full government backing, archaeologists of these nations are now penetrating into areas rarely touched by the spade and are coming up with one startling discovery after another bearing on the story of man's progress toward civilization.

Southeast Asia is one of these little-known areas. Recently, an expedition from the Sarawak Museum, exploring North Borneo, discovered in the Great Cave of Niah a site which is everything an archaeologist can hope for. It is a cave so vast that it could contain the British Museum and St. Paul's Cathedral, with endless unexplored galleries left over.

In the labyrinth of dry, cool galleries inside Mt. Subis—proof against light and rain—the archaeologist in charge found traces of a long sequence of cultures. There were Stone Age implements dating from the Ice Age thirty thousand years ago. There were remains from the Neolithic, the Bronze, and the Iron Ages parallel to similar remains found in the Near East. And there were deposits of T'ang and Sung dynasty pottery showing an important trade between China and the Western Pacific Islands as long ago as the 7th century A.D.

Then last year, in one of the many unexplored chambers, the expedition came upon what is described as "one of the strangest, loveliest and quietest death-scenes an archaeologist can wish to see. High above the valley floor, in a grotto beautifully colored with green, purple and orange lichens and mosses, there is a perfectly dry, dusty floor. In a scattered line along this floor lay a number of what at first appeared to be ordinary Dyak 'perahu' river boats. They lay beached, pointing inwards on the dry dust." Bowsprits were carved to represent sabre-toothed dragons or crocodiles. All about them lay human bones and early Chinese pottery.

Here was a ship-of-the-dead cult coming to light in Borneo only a year or so after the front pages of the Western world had recorded the discovery of a ship-of-the-dead more than five thousand miles away, in the tomb of an

Egyptian king. Were these two cults somehow connected far back in the dim reaches of time? It will take a lot more digging in little known parts of Asia before we can hope to find out. But one by one, the reports are coming in.

Excavations at Anyang, south of Peking in China, before the last war unearthed the earliest known Bronze Age civilization in eastern Asia. Dating from about 1200 B.C., Anyang has been identified as a capital of the Shang Dynasty, perhaps the earliest ruling family of civilized China. In recent months, stories of a dramatic discovery south of the Yellow River, in China, have begun filtering through the bamboo curtain. At Chengchow, one of many groups of Chinese archaeologists has excavated an earlier capital of the Shang dynasty, dating from about 1500 B.C. The reports indicate rich discoveries and a complex Bronze Age civilization similar to, but somewhat later in time than, comparable civilizations of the Near East.

In Soviet Russia, teams of scientists carrying on one of the most extensive archaeological programs of any nation are probing innumerable sites in Siberia, Central Asia, and South Russia. If there is evidence of direct relations between the earliest civilizations of the West and the Far East, the Russians should come up with it, sooner or later. They have made important discoveries. In the Altai mountains at Pazirik just north of Mongolia, for example, they have found a whole group of spectacular tombs of the 4th and 5th centuries B.C. containing elaborate burial furniture, all beautifully preserved beneath a layer of ice. Some of the textiles in the tombs can have come only from ancient Persian workshops. The frozen body of one of the buried chieftains was tattooed in an art style characteristic of South Russia in 500 B.C.

And with all of Asia and the Southwest Pacific coming under the archaeologist's scrutiny, we may yet hope to find the long-sought evidence proving that here was the take-off point for the venturesome groups which headed out across the ocean thousands of years ago to carry the germs of civilization to Central and South America.

The first European explorers in the Pacific found all the island groups in Polynesia occupied by people speaking an Asian language. Thus we know that long before Magellan, Asiatics had struck out across the open sea at least as far as Easter Island. Since the last war, work on Saipan in Micronesia has shown that men from Asia had reached that island two thousand miles from their own coast before 1500 B.C. There is, however, no convincing evidence that Asiatic voyagers ever reached America in sufficient numbers to affect the growth of the great centers of civilization there. Most archaeologists believe that these grew up isolated from the Old World. Nevertheless, there is much yet to be explained. Large pyramidal structures are found in Egypt, Babylonia, Southeast Asia—and in Central America. Cotton domesticated in India was grown on the coast of South America many centuries before the birth of Christ. Sweet potatoes domesticated in South America were found by European explorers in the Pacific Islands. The wheel, so far as we know, was never used in America before Columbus; but not long ago archaeologists digging an ancient burial in Central America found clay toys in the form of wheeled carts. Architectural designs on stone buildings in Central America are remarkably like certain designs on ancient monuments in China and India. Is all this coincidence?

But beyond the question of how our civilization began and developed, there is the larger question of how man, himself, developed—where on this earth and at what point in time he emerged from the condition of an animal to take on the full stature of thinking man.

The first fossil bones of ancient men and man-like creatures were found during the last century in Europe and in Asia. Lying in earth strata which yielded up the corroborating bones of extinct animals and other evidence of great geological antiquity, they made it clear that men, or man-like beings, had inhabited the European-Asiatic land mass for some hundreds of thousands of years.

Central Asia and India were the regions favored by scientists as the likely place of origin of man. The various types of fossil man known from bones found in Europe, in Java, and in China were until quite recently organized into a developmental series demonstrating biological evolution from the very primitive Java man to the modern Homo Sapiens—true man. The oldest known remains of men like ourselves belonged to the Late Ice Age period in Europe, so the origin of Homo Sapiens was generally set at thirty to fifty thousand years ago during the era when ice sheets covered much of the Northern Hemisphere.

But recent discoveries in the field, particularly in Africa, are now making drastic changes in our ideas about human evolution. A great many new types of fossil men found in recent years have shown that the biological history of man is much more complex than we thought. Several strange man-like species found their way into a biological dead-end to become extinct. While our search for the record of man's biological history may bring further surprises, we can now be fairly sure that large-brained species very much like modern men were contemporaries of very primitive sub-human types. Moreover, individuals not very different from ourselves developed much earlier in the Ice Age than we thought possible a generation ago. Today most scientists look to Africa as the place of origin of man and they have come to expect dramatic new discoveries there which will alter our ideas of human evolution.

Only last July, Dr. L. S. B. Leakey and his wife found the skull and part of the skeleton of a new genus, Nutcracker man *(Zinjanthropus boisei),* lying deep in a gorge in Tanganyika, East Africa. This strange creature, less than five feet in height, had a man-like face and teeth, a skull crest something like a gorilla, and a brain capacity probably only about half that of a modern man. Yet he was a maker of stone tools. Lying with the skeleton were crude flint implements, a hammerstone, and bones of animals he had hunted. Many of the animals living at that time in Africa were gigantic—wild sheep standing seven feet high at the shoulder with a twelve-foot span of horns, wild pigs as large as rhinoceros. Nutcracker man could have killed only the infants of such animals, so he probably lived mostly on plant foods.

All this has brought up another question for scientists to debate: what is the dividing line between a man-like animal and true man. Did ape-men use fire and make tools, or does tool-making mark the emergence of animal into human?

In any case, Africa has now become the primary hunting ground for the remains of fossil men and their earliest tools. There are many who believe that the ancestors of all men are to be found there.

Moreover, the archaeologist may soon have the means to determine much more precisely the dates for ancient man and the Ice Age. For some time, radioactive carbon has been utilized to establish the age of organic material up to thirty thousand years old. Farther back than that, there was only uncertainty. But today a new method of dating is becoming available—a method known as Potassium-Argon, also based on radioactivity. Though its discovery has barely been announced, the world's scientists are confident that it will enable them to fix the absolute age of fossil men and their stone implements as far back as four hundred thousand years!

The number of human fossil bones so far discovered is, of course, infinitesimal compared to the number of individuals and physical types which must have existed. But rare as they are, they are yet enough to tell us much of the story we seek, and few can doubt that today's diggers equipped with their new techniques of carbon-dating are well on their way to answering archaeology's most fundamental question: what is the life-span of the human race in actual years?

Thus, at mid-point in the last century of our present millennium, we seem well on the way to the knowledge, fairly complete and precise, of where we, as human beings, came from and how we got where we are. But facing us is still another question, perhaps the most profound of all: where are we going?

We have studied man during his long day on earth, all but the last few minutes of which he has lived as a savage and a hunter. We have observed his civilizations rising and flourishing and falling, with one elbowing another aside and being elbowed aside in turn.

Out of the timeless processes of history, is there any insight we can gain and bring to bear on this question of our own future and that of our Western Civilization? Has our civilization a predictable life expectancy like all the others? Will we be elbowed aside, too, in our turn?

On the evidence of history, very likely. Yet it is a fact that there are no precedents in history for the kind of civilization we have developed.

The civilization of Western Man is the first to embrace the whole world and its peoples. Except for a few semi-civilized tribes fast learning the ways of the West, there exists no rival culture. There are rival nations and rival economic systems, but they are all a part of the one all-embracing civilization. Furthermore, our civilization has reached the stage of development where it is able to alter the physical aspect of the very world we live in.

Whence, save from itself, is its destruction to come? Lacking an outside force capable of toppling it, will Western Civilization survive indefinitely, or in some climax of madness will man use the technology he has developed over the millennia to destroy himself and all his world?

EXPEDITION NEWS

LEPTIS MAGNA

Mr. Brandon Barringer who, with the Museum, is sponsoring the exploration of this site in Libya has given us a progress report of the work which is under the supervision of Mrs. Edward C. Carter 2nd.

The main site is a peninsula, twenty feet above sea level, between the Mediterranean and the Wadi Lebda, east of the restored ruins of the great Roman city and west of the restored Roman port. This area, believed by all writers to be the site of the original Phoenician settlement from which the city grew, has never been dug. Excavation started March 29th and our last report covers the work week ending April 26th. Twenty workers have been split into three groups and four separate cuts have been made on the peninsula. One is from the Mediterranean shore, one was a sounding slightly inland, and two came in from the Wadi.

On the Mediterranean, the whole of a sixty-foot face was found to be covered by a massive crude stone wall without floors or doors, the foundation of some structure; a platform continues inland. Part of the filling was from a Phoenician dump and more from a Roman dump. A Punic lamp was found. The wall and a Byzantine graveyard were cut through and the trench was extended beyond it to the southwest on virgin soil some twelve feet below the existing land surface.

The inland sounding disclosed two large marble-faced reservoirs of a Roman bath complex at a depth of ten feet and had to be abandoned.

The first harbor trench continued for sixty-five feet along the top of the two-foot thick Severan pavement, five feet above the water level, with a Byzantine sheepfold and watering trough built of reused Roman columns and building stones on it. The end of this pavement has finally been reached and a sounding is being made at the end of this cut.

The second trench from the Wadi was on the lower, Neronian pavement. It encountered a Roman structure and sterile soil beyond it.

No Phoenician level having been found, though the dump material (Greek sherds) indicates the presence of one somewhere, a new sounding has been begun on the far side of the Wadi Lebda (the other side of the original harbor). Two other soundings through the Roman part of the city are also being made.

SHIPWRECKS

George Bass, Student Assistant in the Mediterranean Section, left for Turkey in April to take charge of the underwater exploration off the southwest coast of Turkey. In this region forty-seven ancient wrecks have been pin-pointed, ranging in date from the 15th century B.C. to the 9th century A.D. Some of these are described in the April number of *National Geographic Magazine*. The expedition hopes to investigate the earliest wreck, that of a ship carrying a cargo of bronze implements and ox-hide-shaped copper ingots, evidently in transit from the mines of Cyprus when the ship was sunk about 1450 B.C. A few of these copper ingots or "pigs" are known. Their weight is fairly uniform, and some bear stamped impressions; evidently they were the currency of their time. Expert divers, photographers, and underwater draftsmen will participate in what will be the first scientifically organized exploration of an ancient wreck.

PLANS FOR EL-JIB 1960

The fourth season of the Museum's expedition to el-Jib in Jordan, the biblical Gibeon, will open on June 15th. The first objectives will be the further excavation of the winery which appeared during the closing weeks of the 1959 campaign and the continuation of work on the elaborate Roman tombs which were encountered at the very end of the season.

High priority will be given this season to determining the history of occupation at Gibeon. The major periods are known from excavations in the areas of the pool and the winery, but in these sections the exact sequence of settlement has been disturbed by cleanings and reuse. It is hoped that there can be found a part of the ancient city which is undisturbed from the earliest (about 2800 B.C.) down to late Roman times. Such a record within the mound itself can serve to throw considerable light upon the more than forty biblical references to Gibeon, with which el-Jib has now been firmly identified.

The staff for the 1960 season is international in character, consisting of two Germans, two Frenchmen, an English woman, two Jordanians, and four Americans. Professor Arnulf Kuschke of Mainz will be in charge of further explorations of the winery; Father John L. McKenzie S. J. expects to extend the cemetery; and Miss Diana Kirkbride of the British School of Archaeology in Jerusalem will devote her efforts to problems of stratigraphy. Dr. James B. Pritchard will again be in charge of the project.

MUSEUM PUBLICATIONS

Recent additions to the *Museum Monographs* series are two Ph.D. dissertations: *Piedras Negras Archaeology: Artifacts, Caches, and Burials* by William R. Coe and *Sumerian Proverbs: Glimpses of Everyday Life in Ancient Mesopotamia* by Edmund I. Gordon.

The Museum's expeditions to Piedras Negras (1931-39) produced numerous artifacts associated with the carved and dated Maya monuments and ceremonial masonry buildings which were the prime objectives. Some were with burials and many were cached away under plastered floors of buildings and plazas. Dr. Coe presents all such objects other than pottery vessels, and gives them meaning by developing typologies and tracing the distributions of the types at the site, and also at other sites, so far as known. The book is organized for maximum utility to other archaeologists.

Sixty-nine pages of photographs and drawings, mostly by the author, cover everything from corn-grinding stones to jade inlays in human teeth, and bits of jade or shell incised with the faces of gods. Of particular interest are "eccentric" forms of chipped flint or obsidian, which were here cached

(Continued on page 36)

A late afternoon street scene in ancient Pompeii: with traffic restrictions lifted during the two hours before nightfall, the driver races his chariot between stepping stones over which two ladies have just walked to avoid the puddles of rainwater.

THE EMBATTLED DRIVER IN ANCIENT ROME

By KENNETH D. MATTHEWS, JR.

As a driver do you become annoyed with present-day traffic conditions? Most probably you do and the same may be said of motorists in all of our major cities. But this does not make you a suffering citizen typical of the twentieth century alone, for you are only experiencing an aggravation as old as the concept of pleasure vehicles themselves. Do not go back a hundred years in your mind or, for that matter, even five hundred years; rather consider the time in thousands of years. Three millennia ago drivers swore in the streets of Egyptian Thebes and in Babylon too. In all probability their antagonism was directed toward pedestrians, but when we come to the busy streets of Imperial Rome we find sufficient cause for drivers to become annoyed with one another as well as with pedestrians. And surely those who walked the streets of Rome had a few choice words for drivers.

From the legislative and literary material produced in the heart of the ancient Roman world, we can recreate rather accurately the situation existing in the field of vehicular traffic. A comparison of problems and solutions in ancient Rome with those existing in our American cities today offers us some rather interesting surprises.

First we must remember that the Romans handled chariots and wagons drawn by horses or mules which required more physical strength than that expected of a driver today. Then too, the city of Rome had grown without the guidance of a city planning commission and a master scheme of streets and byways. In Rome one did not find the touch of a Hippodamus or a Haussmann. A few broad and many narrow streets twisted their way among an intricate mesh of winding alleys and footpaths.

By the time of Julius Caesar, vehicles had become such a potential problem to the citizens and magistrates alike that something had to be done. For quite different reasons a law had been passed at the end of the 3rd century B.C. forbidding women to ride in carriages. This was included in a war measure restricting the display of feminine luxury and we can imagine with little difficulty the feeling which the ladies of Rome had for Gaius Opius, the originator of the law. Twenty years later they forced the repeal of this law but during the 1st century A.D. the same restrictions on feminine riding were again in force. This seems to have been the result of Caesar's legislation of 44 B.C.

The problem faced by Caesar, however, was of much broader scope and it took a man such as he to produce the ultimate solution. At one sweep he outlawed the use of private vehicles on the city streets during the first ten hours of the day. In every Roman day there were twelve hours of daylight adjusted according to the season. This meant that during the last two hours before darkness settled one might begin his driving. It followed that all business deliveries were made at night while heavy, privately owned coaches which carried paying passengers and their baggage left the city very late in the afternoon or early in the morning before the sun rose.

There were certain exceptions as one would expect. Triumphing generals, vestal virgins, and priests could always employ chariots or carriages; one would also find vehicles in the processions prescribed for particular religious festivals. Since the Imperial Roman government was intensely interested in the construction of public buildings, it also granted contractors working on these structures the right to convey their materials by wagons during the day. If work was in progress on an addition to a private home, however, no one would presume to transport the building blocks by day.

One would also find in Rome certain residential streets where vehicles were forbidden both day and night. Signposts were not necessary to

A street of shops in the Market of Trajan, one of the commercial districts where goods were delivered by wagons at night.

A bas relief showing the covered carriage in which, for a fee, the ordinary Roman traveler would be carried on his journey along the Roman highways.

Ruts worn in the paving of the ancient road to Tusculum and Labici where it passed under the arches of the aqueduct at the Porta Praenestina, the modern Porta Maggiore.

indicate this condition as it was far easier to erect stone posts across the roadway. From Pompeii we learn that road construction often involved the provision of stepping stones leading across the street from one sidewalk to the other. Thus pedestrians avoided the streams of water and refuse flowing down streets not adequately provided with underground sewers, and at the same time night traffic was kept at a slow speed so as not to collide with these obstructions. In a similar manner, ruts worn in the paving stones served to guide the wheels of chariots and wagons.

The narrow streets of the capital itself posed quite a problem in regard to the direction in which traffic should move. Some streets offered passage for only one chariot or wagon at a time and yet there seems to have been no official attempt to create one-way streets. In effect, the driver himself accomplished this by sending on ahead a runner who held up traffic at the opposite end until the chariot had passed through. We know that wealthy Romans maintained such runners when they traveled out of the city. If one did not resort to this device there was every possibility of a traffic jam in the middle of the block. Imagine the uncouth words of rough wagon drivers as they kept the neighborhood awake in the darkness of the night while they disputed the right of way among themselves.

Yet exactly who had the responsibility of apprehending those who ignored traffic regulations? To answer this we must first understand the strong feeling which the Romans had for the division of the day into two parts, the hours of daylight and those of darkness. By the light of the sun life ran its normal routine. After dark, however, chance and the distorted nature of some men created a world in which the lives of citizens were very likely to be threatened. With this in mind, the emperor Augustus in A.D. 6, after an unsuccessful earlier attempt, dealt with the nocturnal threat of fire by establishing a fire brigade of seven thousand men. Officially known as the *Vigiles,* the group was familiarly called the "little bucket fellows." Since he had already divided Rome into fourteen regions, the emperor grouped these men into units of one thousand, each unit responsible for two regions in the capital.

In addition to patroling the streets in search of fires, the men also took into custody runaway slaves and persons who appeared to be engaged in criminal activities, especially footpads and housebreakers. For traffic violators they probably had little concern since restrictions were not in effect during the night. However, they would quell any street disturbances caused by vociferous wagon drivers. In effect, Augustus thus gave to this body of firefighters the police responsibilities formerly assigned to the Three Men of the Night, a special staff organized in Republican times to patrol the streets at night. Under Augustus these three men continued their duties as guardians of prisoners in the *Carcer* or state prison.

What about the daytime, one asks. In addition to the *Vigiles* or night fire brigade and police force, there also existed a body of three thousand men known as the Urban Cohorts. They were assigned duties principally for the daytime. As there were barracks at the city gates for the *Vigiles,* it seems logical that certain contingents of the Urban Cohorts should be assigned to the gates from sunrise until almost sunset, at least for the purpose of enforcing the law. Thus it would be quite easy to stop any carriage or chariot trying to enter the city proper and to take into custody anyone attempting to leave the city in a wheeled vehicle.

Of course, during the early Empire the old city walls of the 4th century B.C. no longer surrounded the entire area of Rome which had continued to grow outward from the ancient center. Inasmuch as Augustus created a special curatorship for roads beyond the city walls, one concludes that it was merely the heart of Rome within the Servian walls which was governed by the traffic laws.

It is of interest to note that the *Vigiles* were not regular Roman citizens but men who had been freed from slavery. In earlier times the city of Athens had employed slaves as metropolitan police and it is pointed out that Augustus, in establishing his troops of night firemen, patterned the organization after that existing in Alexandria where slaves were used in a similar capacity. Augustus utilized freedmen, however, deeming this arrangement safer and more politic. One can develop arguments for and against the loyalty of such men, but the evidence indicates that the faith of the Athenian, the Alexandrian, and the Roman governments was not misplaced. Of course various pressures were brought to bear and Rome itself offered the inducement of a restricted form of Roman citizenship granted when the freedmen had served a period of six years as members of the *Vigiles.*

Having given recognition to law enforcement in the streets, we should like to know the officials responsible for hearing a case presented against a traffic offender. The matter is quite simple. If the lawbreaker was taken at night by the local contingent of the *Vigiles* he would be haled before their supervising officer, the Prefect of the *Vigiles* when he opened court the next day in his barrack headquarters outside the old Porta Ratumena. The prefect presumably led a rather strenuous life overseeing the activities of his men by night and listening to minor infractions of the law by day. This routine was prescribed by the laws themselves, but we can be sure that the poor man delegated his authority during some portion of the night so that he might secure a few restful hours of sleep.

In the case of a daytime violator, the matter would be presented to the Prefect of the City under whose authority the Urban Cohorts were placed. This prefect held court in the Forum of Augustus where stood the great temple of Mars the Avenger. In theory and practice, the Prefect of the *Vigiles* was subject to the control of the Prefect of the City and in only the most important traffic cases concerning persons of high rank would the Prefect of the City ever become involved. In either case punishment would probably take the form of a fine. Again, however, we must remember that evidence suggests that traffic violations occupied a miniscule portion of the docket submitted to each of the magistrates mentioned. We are left with the definite impression that traffic violations were rare. This is quite logical

(Left) The Porta Tiburtina, the city gate through which traffic flowed on the way to Tibur. Officials were stationed at city gates to check the vehicles passing through. (Right) The Forum of Augustus where the Prefect of the City presided over his court. In the forum stand the ruins of the Temple of Mars Ulter, vowed by Augustus at the battle of Philippi.

when all vehicular traffic had been eliminated during such a large portion of the day. It would appear that the streets of Rome at night were more or less the free domain of drivers who were almost completely unrestricted in their behavior.

After reviewing the matter of traffic laws and their enforcement within the city of Rome, the curious reader may wish to know how the Roman government allocated the responsibilities for maintaining the streets in good condition. The answer to this question is complicated by the fact that in the transition from Republic to Empire some magistrates lost portions of their authority to newly created government positions. Among the various Republican city magistrates there existed those known as the *aediles*. Under the emperor Augustus this office continued and was held by four men at one time who were responsible for the policing of streets and market places as well as the supervision of a body of slaves for fighting fires. The *aediles* were assisted by a group of four men who spent their entire time looking after the condition of the streets. Even though the fire brigade was transferred in A.D. 6 to the Prefect of the *Vigiles* it is probably that the four men continued to assist the *aediles* in keeping the streets clean.

It was not until the 4th century B.C. that the citizens of Rome enjoyed the luxury of their first paved street but by the 2nd century B.C. many streets in the capital were paved with tufa blocks. When a street had to be paved or repaved the *aediles* allocated the work to certain contractors. The public treasury assumed the cost for the section extending out to the middle of the street in front of public buildings; apparently property holders were assessed for the remaining costs, if indeed they were not assumed by the emperor or some person of wealth and prominence.

Owners of buildings were also responsible for keeping the sidewalks swept clear and the emperor Domitian in A.D. 92 decreed that shop owners could no longer block the sidewalks with counters displaying their wares. Thus the pedestrian was not forced to stumble through miscellaneous debris or walk in the streets to avoid the merchants' counters. Again the *aediles* were the persons responsible for enforcing the regulations and, if a property owner did not live up to his obligations, the *aediles* paid men to remove the offending obstacles and then charged the cost to the owners.

From all of this it is quite evident that the late Republican and Imperial governments considered the safety and unimpeded flow of pedestrian traffic a primary requirement in the effective protection of private and public life during the daytime.

Although some few people may have ridden horseback, this too was forbidden eventually. But at night all restrictions on vehicular movement were removed. Commercial wagons lumbering up the expressways of Italy, such as the Appian Way or the Ostian Way, were halted at the city gates until the last two hours of sunlight. Persons deciding after breakfast that a ride in the country might be in order had to go to the city

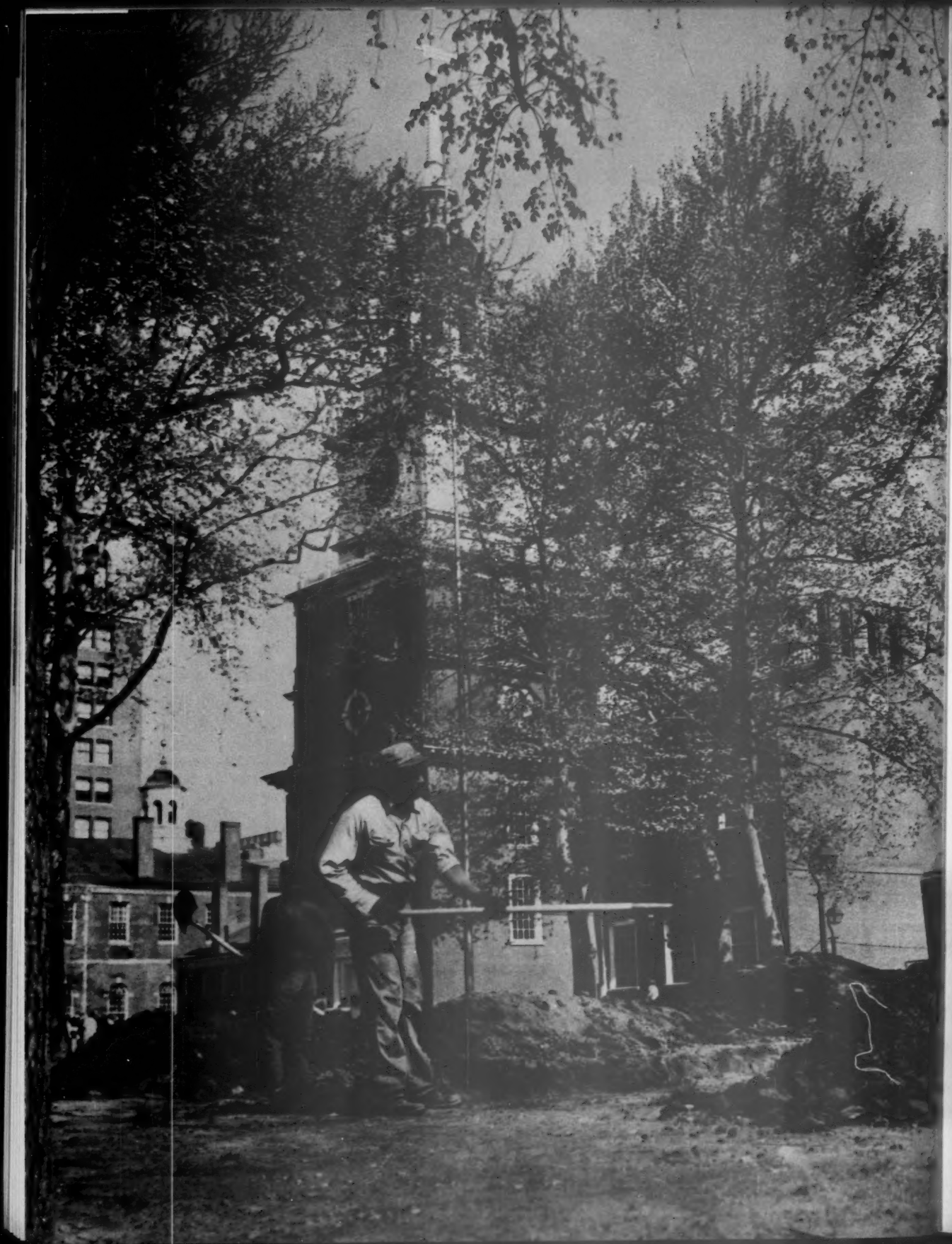
The barracks of the Vigiles at Ostia, the ancient port of Rome. Contingents of the Vigiles at Rome served four month tours of duty at Ostia.

gates in a litter or on foot and there pick up a carriage or chariot. Although some wealthy citizens may have had carriage houses attached to their homes, we can assume that large public garages near the city gates still remain to be identified by archaeologists.

Those who planned a trip in advance left the city in their vehicles before sunrise or else very late in the afternoon. Since while traveling one spent the night in an inn or at the home of a friend, it was preferable to cover as much ground as possible before nightfall and so one was less likely to leave Rome late in the day. Early morning was the time when most travelers passed, sleepy eyed, through the dim dawn shadows of the city gates and rattled off awkwardly at first between the trees and tombs along the highway.

Imposing and important as were the famous Roman roads, their effectiveness began and ended at the walls of cities. Unlike our modern speedways they did not convey traffic into the heart of a community. Although many passed directly through smaller towns, yet traffic was halted at the limits of these communities. By a law of the emperor Claudius, the traveler had to descend from his chariot or carriage and go through the town on foot, in a carrying chair, or in a litter. This must have been a great nuisance if the law was seriously enforced. We suspect, however, that officials were not strict. For example, Hadrian, in the early 2nd century A.D., decreed that no horses should be ridden within city limits. Yet, later in the same century, Marcus Aurelius had to issue the same mandate as well as others repeating earlier legislation against riding and driving inside the limits of any city. This obvious repetition of laws reveals a rather lax state of law enforcement. However, the vehicular traffic laws themselves carried the means of their own destruction; from the beginning exceptions were granted other than those relating to religious functions. By the 3rd century A.D. these exemptions had been extended to various state magistrates and were assumed by others of high social station. Pedestrians were no longer free from the threat of injury or even death at the hands of a careless chariot driver.

Since those days, drivers have continued to multiply and municipal governments have become increasingly reluctant to legislate against the privileged class, the only one with funds sufficient to purchase and maintain private means of transportation. In our own times this distinction of wealth and privilege no longer holds true: the ownership of an automobile does not imply wealth. In our large communities traffic congestion has become a serious and controversial problem. The convenience and prerogatives of the greater portion of our citizenry are involved, yet one wonders if perhaps they, like the citizens of ancient Rome, should surrender the right of driving in the business and commercial sections of our cities. Even with the declining effectiveness of Roman traffic bans, it was unthinkable that anyone should drive through the forum which comprised the heart of a Roman city. Have the ancient Romans offered us a solution which may well be applied to our situation today?



Digging an Historical Shrine

PHILADELPHIA'S INDEPENDENCE PARK

By JOHN L. COTTER

Photographs by National Park Service

Every now and then a sudden gleam comes to an archaeologist's eye as he searches a palaeolithic cave deposit, or even an 18th century house foundation. Fancy finding what might be a tangible association of Benjamin Franklin's famous kite experiment right in the ruins of his own house in Franklin Court, down on Orianna Street, within an echo of Independence Hall!

Well, with a financial assist from the American Philosophical Society, National Park Service diggers in June of 1953 found a fragment of a Dutch delft tile below the modern sidewalk and tiny vacant lot where Franklin's house once stood. Before leaving for Paris in 1764 to represent the colony, the energetic statesman had directed that the house he had so carefully planned should be built here under the uneasy attention of his wife. With considerable difficulty, described by the harassed Mrs. Franklin in painfully composed letters to her husband, the house was completed next year in the green and open center of the block of town buildings bounded by Second and Third, Chestnut and Market Streets. As for the tile, it was probably in a fireplace of the house, perhaps in the later addition which housed Franklin's celebrated library.

Test trenches dug in Independence Square in the search for evidence of 18th century buildings and landscaping.

PHOTOGRAPH COURTESY OF THE PHILADELPHIA BULLETIN

What excited our interest in the tile is the figure of a man with an object extending far above his head and apparently attached to a line which he holds. A kite?

The Dutch were fond of showing in frugal but expressive brush strokes—learned from Chinese porcelain painters—their everyday doings on such square fireplace tiles. Some show men-at-arms or men working at their crafts; others picture children playing ball, wrestling, running —even flying kites. The last would be a natural selection for Mr. Franklin.

Alas for conjecture! A dutiful and scholarly inquiry was directed by the present Independence Park archaeologist, B. Bruce Powell, to an expert in Dutch tiles, George B. Jackson of Edwin Jackson Fireplaces, New York. Jackson instantly responded with a photograph of a strangely similar figure on a complete 18th century Dutch tile. The "kite" is clearly a shepherd's staff, reaching to the ground from over the shepherd's left shoulder!

Not much ground in the vicinity of Franklin's house has remained undisturbed by later buildings, but now that the ground has been cleared and Orianna Street can be blocked off, the area will be completely explored with the hope that a chance pocket of preserved refuse may yield at least one object indisputably connected with that most ingenious of Philadelphians.

(Above) Fragment of 18th century delft tile first thought to represent a man flying a kite. (Right) Complete tile showing that the representation is really of a shepherd.

The Franklin House is only a portion of Independence National Historical Park. The Park's five blocks in the heart of Philadelphia comprise the greatest concentration of historic sites in the United States. Here Indians camped before the white man's arrival, here they parleyed with the early 18th century government of Pennsylvania. Here the Declaration of Independence was signed.

And what has happened to the original scene after nearly two centuries of "improvement," decay, encroachment, "restoration," and the present energetic renaissance? Buildings erected as town houses were made over into stores, then re-made again. Office buildings of the later 19th century surmounted and largely obliterated all traces beneath them. Now all have been levelled to allow breathing space for the little nucleus of the shrine of liberty. Not much actually remains beneath the ground: some badly interrupted foundations, a few wells, cisterns, and privies, a quantity of refuse—and many questions.

The challenge to the archaeologist here, as in all historic urban renewal areas, has been to work within the narrow confines of research possibility, so pacing and limiting his activities that he does not delay demolition or construction. He often works just before and just after the event of destruction and in and around disruptive intrusions. Quantitatively the results are not very impressive. No historically vital questions have been answered, no decisions made which will change the outlines in history texts.

What then can archaeological investigation accomplish? Sparse as his product may be, the archaeologist has provided something that was not there before: the assurance that no stone, literally, was left unturned to provide the last ounce of physical evidence for the record. And, perhaps more important, the artifacts he has found bring back the literal "feel" of history.

Since these artifacts are clues to activities and ideas of their time, there must be much preparation and research. At Independence, the historical research which furnished a prologue to digging began in 1951. It continues as the digging goes on. And after the last trowelful has been turned, research will still continue. First there is research into the physical, political, and social history of any structure, feature, or site in the Park, and into all persons and events connected with it. So far, more than two million manuscript and other primary records have been examined. Park historians, working as a team, have accumulated more than 40,000 research

cards; 29,000 photographs, photostats, and prints; 55 rolls of microfilm; and a 2,200-volume library. This is a beginning.

Then there is the architectural investigation—the study of building elements and details, the measured drawings—all undertaken while over a million visitors a year must be allowed to walk through these ancient fabrics as freely as possible. Obviously the balance of attrition and preservation is a delicate one.

Actual archaeological excavation began in 1953, and continues. The official premise of the work is the requirement that, in the spirit of the Antiquities Act of 1906 and the Historic Sites Act of 1935, physical development which endangers archaeological values calls for the salvage of these values before the development takes place. The view that the "march of progress" takes precedence over the preservation of these values undisturbed beneath the ground is a pragmatic one which may be questioned several hundred years hence.

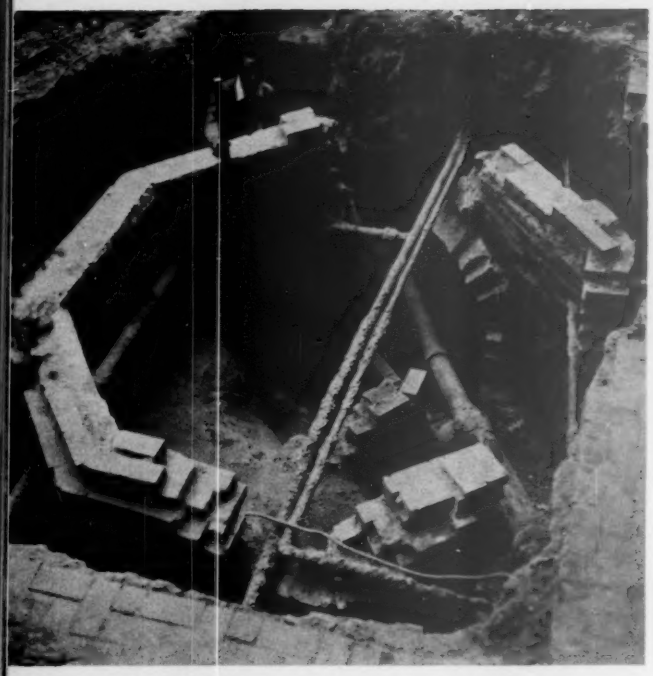
In 1953, Paul J. F. Schumacher, the first project archaeologist, graduate in anthropology at the University of Pennsylvania, began systematically testing construction areas. Progressively, post-18th century buildings on historic sites were removed and the ground searched for earlier walls which had not been destroyed by cellar excavations, for wells and privies and artifacts still intact in tiny yards and below sidewalk and street paving. In 1957, Schumacher left to become Regional Archaeologist at San Francisco and B. Bruce Powell, Virginia born archaeologist who trained at the University of Michigan, came from the Jamestown excavation project to continue the Independence dig.

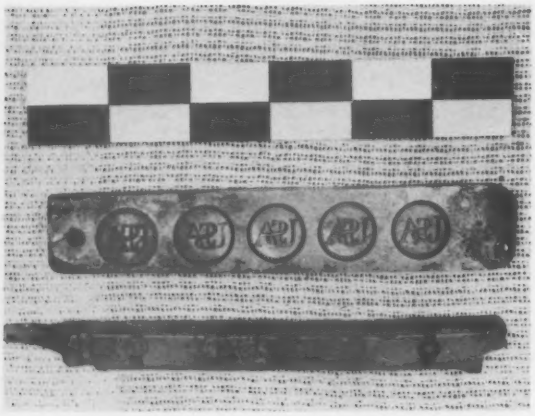
As architectural and ground searches continued, two major sites and many minor ones were developed. The major ones were Independence Square and Benjamin Franklin's house site, the first now completed and the second to be finished in the summer of 1960. Sites of less importance, but of considerable value in establishing historical data and cultural interpretation, were given as exhaustive investigation as the limitations of space and time would permit. And sometimes the archaeologist merely followed closely the progress of demolition that he might observe and record any features around and beneath exposed foundations.

Thus, work in the basement of the Bishop White house (which has been preserved) on Walnut Street between Third and Fourth and in that of the 1880 building adjoining resulted in

View from Independence Hall tower of the serpentine walk designed by Samuel Vaughan in 1785. The original landscaping is to be restored.

One of the trenches in Independence Square





Rare brass button mould used in making pewter buttons for the first United States Army. It was found in a privy pit in Carpenter's Court which had been obliterated by the building of New Hall in 1790.

At the rear of the Independence Hall tower, excavation revealed a vaulted privy pit, which can be dated to 1790, beneath a 19th century octagonal privy housing.

discovering the Bishop's cold cellar, his well, and his privy. Also revealed were valuable details of the original architecture, much of the fabric of which had been considerably altered.

Before the reconstruction, by the National Park Service, of New Hall (originally built by the Carpenters' Company in 1791) for use as a museum of Marine Corps history, excavations uncovered the original foundation walls of the building and two privy pits, one of which was destroyed by the construction of New Hall itself. A large brick privy pit at the rear of New Hall had been closed with 15 feet of house rubble following demolition activities in the late 19th century. Below, however, in the remaining portion of the pit, to a depth of 22.2 feet, were quantities of artifacts ranging in date from mid-18th to late 19th century. Here is a continuous record of our ancestors' habit of disposing, as it were privily, of useless or broken objects—even stolen ones—as well as of those accidentally lost.

Sometimes archaeology contributes information available through no other means. Documentary research shows that in 1739 the Province of Pennsylvania had obtained title to a little more than half of the city block now comprising Independence Square. Here the Assembly resolved " . . . that Materials be prepared for encompassing the Ground with a Wall in the ensuing Spring . . . " Just where the southern part of this wall was placed has been a question. Records show that the property line ran from Sixth Street 99 feet eastward, made a right angle turn and ran north 80 feet, turned east again for 198 feet, thence south for 80 feet, and, finally, turned and ran 99 feet to Fifth Street. Did the wall follow this line or did it run straight across the Square along the northernmost part of the line? History decided on the latter position. Excavation showed conclusively that neither assumption was correct. The wall ran straight across the Square in line with the *southernmost* part of the property line, so that some 16,000 square feet of property not even belonging to the Province was enclosed. History, however, records no protest against this primordial government encroachment.

As the shambles of wrecked buildings is succeeded by archaeological trenches and probings, and then by landscaping or rebuilding, another and considerably lovelier aspect grows upon the Independence Park area in old Philadelphia. The spade and trowel have even disclosed the original layout of Independence Square in the late 18th century, when landscapist Samuel Vaughan's serpentine paths wound gently amid shrubs and trees, within the now-revealed brick wall. This is the scene to be recreated in the Square.

THE PINK PEOPLE

By DAVID CROWNOVER

Europeans occur in the tribal art of Nigeria as far back as the 17th century when Portuguese sailors navigated the waters of the Niger River and established lively trade with the despotic kingdom of Benin. These bearded gentlemen found their images used decoratively on a variety of artifacts—girdle masks, boxes, and even jewelry. The examples that have come down to us from this period are cast in bronze. In some cases, as in a wide bronze armlet (1) in the Museum's collection, the bronze was carefully embedded with another metal—copper—to embellish the piece and isolate a decorative motif. Portuguese heads, hatted and bearded, in the fashionable long hair of the period alternate with rosettes in every other longitudinal band of the armlet.

1

Is the almost cartoon style intentional? Benin craftsmen, first-class metal casters and designers, we assume, found these beards, this straight hair, that cavalier hat, bizarre and worthy of caricature short of understanding. Humor often plays a part in the European-influenced wood carvings that have been produced in Nigeria in the past six decades. Trained, sensitive, and sophisticated carvers exist in the villages of Yorubaland to this day. These artists, many unfortunately anonymous, could easily look at the visitors to their villages and capture in the timeless monumentality of uninhibited tribal art the figure they cut.

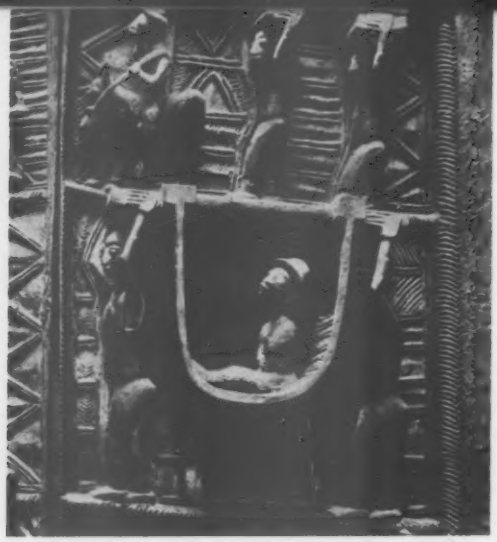
Leon Underwood, the sculptor, writer, and ethnographer, visited a village near Lagos. "The chief thought I was a mystery-man. He gave me a small orchestra to lead my way, guiding me and preceding me wherever I went in this area. They wanted me to stay on there."

Impressions of white men are often strong in the life of these tribal outposts. The soldier is certainly an ever-present type. One particularly poignant representation of a *fin-de-siècle* warrior (2) in the Museum's collection boasts gun and complete uniform except shoes. The figure placidly stands at attention and retains still the typical heavy-lidded Yoruba eyes.

2

Another category of strangers is the trader. The usual trader to these parts is the Arab. Two

3



4

wonderful examples are to be seen on a "gift-wrap" wooden box carved and painted (3), probably made to hold nuts. These exotic salesmen support, caryatid-fashion, the shallow carrier. The beard plays a major part and the eyes, carefully articulated, combine with the flowing Arab dress to complete the characterization.

The explorer often appears on the scene. There is a wonderful portrait in one of those pictorial panel doors (4) carved by Areogon of Abeokuta in Yorubaland, one of the treasures of the British Museum. Carried in a litter, the European relaxes as he surveys the scene. Another piece (5), from The Olsen Foundation, shows the white subject astride his seat, his booted feet hanging in abject resignation, his now fully Europeanized eyes staring straight ahead, his lips parted, ready for whatever may come. The pith helmet and immaculate uniform complete the subtle caricature.

The hunter, mounted, gun poised, has been monumentalized in still another Yoruba wood carving (6) in The American Museum of Natural History in New York City. The rider, astride a wise and patient animal, proceeds with vigor and purpose in a most realistic presentation of the European.

The preacher-missionary is around the village long enough to be very well known. A figure in the Museum (7) portrays the Man of God, stolidly patient, holding open a Bible in an attitude of preaching. Charm and candor appear in the treatment of the conservative hat and the

7

8

5

6

emphasis of the intense eyes by a circle of small dots painted around them.

Variations of clothing don't escape the Yoruba carver's eyes. A dance mask (8) of recent manufacture, from the United States National Museum of the Smithsonian Institution, is crowned with four figures. Two of them are native ladies, two white men wearing shorts. They have been endowed with tribal markings carefully painted on.

Perhaps a rare glimpse of a stranger engaged in his occupation is to be seen on a wooden painted headdress ornament (9) from the Musée de la France d'Outre-Mer in Paris. Carved by a Baga craftsman in the French Sudan, the scene is set on the back of a crested hornbill. An avid collector is busy gathering a Nimba headdress mask. This carving, executed about 1930, is a magnificent document of cultural contact and an apt artifact made to be shown at an Exposition of the colonial interests of France.

Even the great received vivid characterization as in a crowned and labeled half figure of Queen Victoria (10) in the collection of Dr. William Bascom. In deference to the climate, for certainly the artist thought of her as being in Yorubaland, Her Majesty has been thoughtfully provided with a fan.

Color plays a major role in the decoration of these carvings. The clothing is often vividly colored or immaculately white. The eyes in some cases are blue. Representation of European skin, however, is the most telling feature. For, as others see, the pigment is pink.

9

10

THE AUTHORS

ROBERT H. DYSON, JR. ("Death of a City"), anthropologist and archaeologist, worked in the Southwest and Northeast United States between 1947 and 1950; was a Junior Fellow of the Society of Fellows, Harvard University from 1951 to 1954 and during that time did field work in South Africa, Jordan, and Iraq. He came to the University Museum in 1954 where he is the Assistant Curator of the Near Eastern Section. He was the Museum's representative on the Danish Expedition to Bahrein in the Persian Gulf and is Field Director of the Hasanlu Expedition.

JEAN GORDON LEE ("A Korean Potter's Masterpiece") is Curator of Far Eastern Art at the Philadelphia Museum of Art and Research Consultant in the Oriental Section of the University Museum. She received her BA from the University of Michigan and has done graduate work there and at the University of Pennsylvania. Her particular interest is Oriental ceramics and she has contributed papers on various aspects of this subject to the *Bulletin of the Far Eastern Ceramic* Group and the *Archives of the Chinese Art Society*, as well as to the *Bulletin of the Philadelphia Museum of Art.*

FROELICH RAINEY ("The Changing Face of Archaeology"), Director of the University Museum since 1947, has done anthropological research in the West Indies and Alaska and is recognized as one of the foremost authorities on the circumpolar region. He is now particularly interested in the new archaeological techniques presently being developed: he helped to found the Carbon-14 laboratory at the University of Pennsylvania; on a recent trip to Mexico with Dr. Matthew Stirling of the Bureau of Ethnography, he tested a resistivity meter for locating underground strata and constructions; he has included an under-water investigation in the Museum's expedition program. The over-all planning of this expedition program has necessitated visits to many archaeological sites in Europe and Asia as well as in America.

KENNETH D. MATTHEWS, JR. ("The Embattled Driver in Ancient Rome"), Assistant Curator of the Educational Section of the Museum since 1952, was previously associated with the Egyptian Section. He is a graduate of the University of Pennsylvania School of Education. He has devoted his graduate work to the field of Roman studies and has prepared various television programs on Roman matters related to problems of modern life. He also conducts a weekly radio program of historical topics related to the University Museum over the local educational station WHYY-FM.

JOHN L. COTTER ("Digging an Historical Shrine: Philadelphia's Independence Park") is Regional Archaeologist for the Northeastern United States. He received his MA in anthropology from the University of Denver in 1935 for his studies of early man in America and his work under the late Edgar B. Howard in the excavation of Clovis, New Mexico, the results of which he reported for the Academy of Natural Sciences, Philadelphia. He was head of the Archaeological Survey of Kentucky for two years and for the last twenty years has been archaeologist for the National Park Service. A three-year campaign at historical Jamestown provided the material for his dissertation for the Ph.D. degree which he received from the University of Pennsylvania in 1959.

DAVID CROWNOVER ("The Pink People") was graduated from the University of Pennsylvania in 1952 where he did three years of graduate work in the Department of the History of Art. He has been associated with the Museum for five years, first as an assistant in the Mediterranean Section, then as Manager of Exhibitions. He is responsible for the arrangement of both permanent collections and temporary shows. His especial interest is in the tribal art of pre-industrial cultures, particularly in that of Negro Africa.

SUGGESTED READING

THE DEATH OF A CITY

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Museum Publications *(Continued from page 21)*

in larger numbers than at previously known sites. An appendix discusses the possibilities for using such deposits in relative dating, an approach the author is now developing with great success at Tikal.

Edmund Gordon's *Sumerian Proverbs* represents the culmination of six years of concentrated Sumerological research. It consists of a definitive edition, including the original text, translation, and commentary, of two Sumerian proverb collections numbering between them 365 practically unknown maxims and sayings dating from about 1750 B.C. One of the more valuable features of the monograph, from the point of view of the anthropologist, is the cultural analysis of the references and allusions of the proverbs to the daily life of the ancient Mesopotamian peoples.

The Museum has also published a small picture book—two pages of text and twenty-four full-page photographs—of the Egyptian collections. This is the first of a projected series of leaflets relating to various collections intended for the casual visitor.

UNIVERSITY MUSEUM

WONDER AND HORROR OF THE HUMAN HEAD

APRIL 15 – AUGUST 30